

## **GUIDELINES FOR SUCCESSFUL DESIGN OF FOREST TRAILS AND ACCESS ROADS 1**

### **1. Remember the purpose and the expected use of the road.**

Consider what effects the type of vehicles used, the seasons of use, the products cut and boundary restraints will have on trail location, width, grade, and stream crossings.

### **2. Consider the soils on which the trail system will be built.**

Some soils have severe limitations for trail construction. Others may have restrictive features that can either be avoided or taken into consideration during planning.

### **3. Gather soil and topographic maps, aerial photographs, and soil information.**

Recent aerial photos and topographic maps are essential in designing a road or trail system.

### **4. Plot the proposed routes on the maps.**

Using drainage and slope information from the maps, plot the proposed route watching for: problem soils, streamside management zones, and topography that can keep the road grade less than 10% where possible.

### **5. Check the proposed route on the ground.**

Flag the proposed route for construction, adjusting for problem areas not identified on the maps.

### **6. Minimize the number and size of stream crossings.**

The cost of changing a route can often be less than that incurred by installing expensive stream crossings.

### **7. Design adequate stream crossings.**

When streams must be crossed, crossings must be properly designed and installed to reduce future maintenance costs and to prevent obstruction of stream flow. Protect streamside management zones.

### **8. Design adequate water control devices.**

Get water off the road system with water bars (temporary or limited use roads) or dips and culverts (permanent and high use roads), along with wing ditches.

### **9. Plan for stable outlets for the water devices.**

Empty water bars, dips, culverts and wing ditches gently onto non-erosive, stable areas.

**10. Plan for an adequate right-of-way width.**

Allow for a right-of-way that will accommodate the road surface, gently sloping roadbanks, ditch side slopes, and adequate sunlight for revegetation when needed.

**11. Revegetate 2/**

Revegetate all disturbed areas with special emphasis on steep slopes, ditches and outlets.

**12. Plan for maintenance.**

Block access for unintended uses.

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1/ Adapted from USDA, Natural Resources Conservation Service, Woods Roads, by R. Stoner and T. McFall, Temple, TX 1991.

2/ See NRCS Standard and Job Sheet for Forest Trails and Landings (Code 655) and The Layman's Guide to Private Access Road Construction (USDA – NRCS, TVA, and USDA – FS).